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EXPLORING LECTURERS' ANTECEDENTS AND BARRIERS TO KNOWLEDGE SHARING BEHAVIOR

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Abstract: This study aims to explore lecturers' antecedents and barriers on knowledge sharing behavior. In a university, knowledge is an individual's property, especially tacit knowledge. To benefit from it and avoid the knowledge loss phenomenon, the management in the university must understand the drivers and the constraint factors of knowledge sharing. This study was conducted using a qualitative approach. Data were collected by interviewing fourteen lecturers of Business Administration and Management study programs at three universities in Indonesia. The results show that there are forty-two antecedents and twenty-eight barriers to knowledge sharing behavior, which can be classified into four categories comprised of personal, organizational, infrastructure and opportunity, and social contexts. The findings of the study suggest that management needs to develop an integrative strategy to encourage and motivate knowledge sharing behaviors among lecturers.

Keywords: Antecedents of Knowledge Sharing, Knowledge Sharing, Knowledge Sharing Barriers.

1. INTRODUCTION

From a resource-based perspective, knowledge is a valuable asset for an organization. The development and growth of the organization depends on its knowledge. An organization must have strategies to create knowledge continuously. Knowledge creation is a procedure that assures knowledge is accessible and applicable. This process requires an exchange of knowledge among individuals which is known as knowledge sharing.

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The success and failure of an organization's knowledge creation depends on the knowledge sharing process. Innovation, competency development, and value increase when people contribute personal knowledge to the organizational knowledge (Matzler, et.al, 2008). Hence, knowledge sharing enhances an organization's chances to achieve their goals with a competitive advantage (Lin, 2007).

Universities as knowledge-based organizations also realize the effects of knowledge sharing behaviors in knowledge creation. The development and innovation of new knowledge in a university depends on the knowledge sharing process. By sharing knowledge, the university gains many benefits such as increasing organizational capability, setting standardization and efficiency. Unlike other sectors, business and society have a high expectation of the development and creation of new knowledge. So if the innovations in a university discontinue because of the stagnation of knowledge flow, it will influence business and society as well. It is one of many reasons why universities should support the knowledge sharing process.

Knowledge sharing is a knowledge exchange between individuals, individuals and organization and between organizations (Ryu, Ho & Han, 2003). At the individual level, knowledge sharing is known as knowledge exchange between individuals within an organization. At the organizational level, knowledge sharing is a process of capturing, organizing, developing, and transferring individual knowledge into organizational knowledge. Both at the individual and organizational levels, the key element of knowledge sharing is the individual. In a university, the key elements of knowledge sharing are the lecturers.

As the owner of knowledge, lecturers have both the right and obligation to transfer their knowledge to others. In fact, the knowledge sharing process is not an easy process for lecturers as there are several barriers between lecturers engaging in the knowledge sharing process. In order to understand lecturers' knowledge sharing behavior, a university must have in-depth understanding on the antecedents and barriers of individual knowledge sharing behavior. By understanding these factors, an organization can encourage individuals to engage in the knowledge sharing process.

A number of studies have been conducted to examine the relationship of antecedents on knowledge sharing behavior (Bock & Kim, 2002; Ryu, Ho & Han, 2003; Bock, Zmud & Kim, 2005; Lin, 2007). The antecedents of knowledge sharing behavior also derived from the literature review. None of the studies explored the actual antecedents of individual knowledge sharing behavior in a university. And only limited studies have been conducted to explore the barriers to individual knowledge sharing behavior.

Based on the discussions above, the research questions for this study are: 1. What are the antecedents of lecturers' knowledge sharing behavior?; 2. What are the barriers to lecturers' knowledge sharing behavior?; 3. What are an organization's strategies to minimize the barriers of lecturer's knowledge sharing behavior? This study aims to explore the antecedents and barriers of lecturers' knowledge sharing behavior. This

study is expected to provide an accurate explanation of the antecedents and barriers of lecturers' knowledge sharing behavior. The main contributions of this study are the following:

- Exploring the antecedents and barriers of knowledge sharing behavior in universities.
- Using a qualitative study to get in-depth insights from the individuals to ensure the reliability of the research results.

This paper is organized into six sections including this introduction. The next section discusses the salient literature to identify antecedents of an individual's knowledge sharing behavior. The third section explores the research methodology used in this study. The fourth section discusses the results and the implications of the research and the practice. The last section summarizes the study's contributions.

2. LITERATURE REVIEW

2.1. Knowledge Sharing

Knowledge management is the process of capturing, storing, distributing, and using knowledge (Bock, Zmud & Kim, 2005). The aim of knowledge management is to manage the knowledge flow so that the organization can create new innovations. Knowledge sharing is an important stage in executing knowledge management in an organization.

Knowledge sharing has been defined in various ways. The definitions depend on the experts' perspectives. Some of them defined knowledge sharing as an exchange between individuals (Davenport & Prusak, 1998; Connelly & Kelloway, 2003; Wong and Noe, 2010). Others defined knowledge as a transfer process between an individual and team or group (Alavi & Leidner, 2001; Sharratt & Usoro, 2003).

This study focuses on the willingness of individuals, in this case lecturers, in universities to share with other lecturers the knowledge they have captured and created. Many studies revealed the complexity of the nature and multitude of factors of knowledge sharing (Cummings & Teng, 2003). Knowledge sharing practices cannot always be implemented easily in many organizations. Many knowledge sharing activities often fail (Cabrera, Collins & Saldago, 2006), even in knowledge-based organizations such as universities. This happens because of many differences among organization members (Riege, 2005). In practical, knowledge sharing cannot be forced; the university can only motivate and facilitate lecturers to share their knowledge.

2.2. Factors Affecting Knowledge Sharing Behavior

Based on the support of practitioner papers (Alavi & Leidner, 2001; Davenport & Prusak, 1998), many empirical studies using different approaches have revealed factors that affect knowledge sharing behavior. Some of them used quantitative approaches

(Bock, Zmud & Kim, 2005; Cheng, Ho & Lau, 2010; Hung *et al.*, 2011; Jewels & Ford, 2006; Siemsen, Roth & Balasubramanian, 2008), while others used a qualitative approach (Wasko & Faraj, 2005). These studies have identified the numbers of factors that affect knowledge sharing behavior. This section will discuss those factors from four contexts that include personal context, organizational context, infrastructure context and relational context. These factors can be the driver or the barrier factors for knowledge sharing.

2.2.1. Personal Context

The first context of knowledge sharing behavior is personal context. Personal context is the individual motivation that drives someone to share his/her knowledge. Personal context can be classified into motivation, personal values, and competency.

Many researchers pay attention to motivation as the factor influencing knowledge sharing behavior (Bock, Zmud & Kim, 2005; Kankanhalli, Tan & Wei, 2005; Wasko & Faraj, 2005). People are willing to engage in an action because they understand the potential utility or value (Ryan & Deci, 2000). Motivation is always considered as the key trigger of knowledge sharing behavior. Motivation can be classified into extrinsic and intrinsic motivation (Bock, Zmud & Kim, 2005; Jewels & Ford, 2006; Cheng, Ho & Lau, 2010; Hung *et al.*, 2011). This study defines motivation as an intrinsic motivation. Intrinsic motivation is the motivation that comes from within the individual. When people are intrinsically motivated, they will take part in an action, in this case knowledge sharing, since it is an enjoyable and interesting activity for them. Many researchers found that intrinsic motivation is the ideal motivation in the knowledge sharing process (Jewels & Ford, 2006; Siemsen, Roth & Balasubramanian, 2008). Some forms of intrinsic motivation are recognition, self-satisfaction, personal expectation, and self-esteem (Cheng, Ho & Lau, 2010; Nesheim & Gressgard, 2014).

The second classification in the personal context is personal value. Personal value is an individual's value related to the ethical action. The forms of personal values are trust (Davenport & Prusak, 1998; McDermott & O'Dell, 2001; Lin, 2008), altruism (Hung *et al.*, 2011; Lin, 2008), courtesy (Lin, 2008), conscientiousness (Lin, 2008), sportsmanship (Lin, 2008), civic virtue (Lin, 2008), self-confidence, and self-efficacy and organizational commitment (Liang, Liu & Wu, 2008).

The last personal context is competencies, which are defined by many studies as the knowledge and skills of the sender and receiver of knowledge (Cummings & Teng, 2003; Riege, 2005). Besides that, competency is also defined as a set of knowledge, skills, and attitudes needed in the knowledge sharing process. In knowledge sharing research, competency is defined as one's ability (Siemsen, Roth & Balasubramanian, 2008). In terms of skills, communication is needed in the knowledge sharing process. Gumus (2007) found communication has a strong impact on knowledge sharing.

2.2.2. Organizational Context

In the organizational context, factors affecting knowledge sharing behavior comes from organization. Many studies found that individuals sharing their knowledge can influence the organization. Wang & Noe (2010) found six organizational contexts that can affect individual knowledge sharing behavior, organization culture, management support, reward/incentives, leadership characteristics, organization structure and context (face to face, online). This study only focused on four organizational contexts, which include organization culture, management support, reward/incentives, and leadership characteristics. Because organization structure had been already represented by organization culture and leadership characteristics. The context factor (face to face and online), in this study was not considered as organizational context.

Organization culture is defined as values and beliefs that an organization creates to achieve its goals (Robbins & Barnwell, 2002). Organizational culture is developed to control and manage employees' behavior, and it is taken for granted. Many researchers have examined organization culture's effect on knowledge sharing (Lee & Choi., 2003; Yang, 2007). Knowledge sharing can accelerate in a collaborative culture but not in a competitive climate (Goh, 2002). Knowledge sharing occurs in a trusting and trustworthy work environment (Goh, 2002). Therefore an organization needs to show its accountability for sharing knowledge with others (Bollinger & Smith, 2001).

Connelly & Kelloway (2003) and Lin (2007) examine the influence of management support on the willingness to share. The results show that management support positively and significantly affects the willingness to share. ²⁵ perceived management support such as supervisory control, co-worker support and top management support influence ¹³ the level and quality of knowledge sharing. Management support also increases employees' perceptions of the usefulness of knowledge sharing (Cabrera, Collins & Saldago, 2006).

The next organizational context is reward and incentives. Rewards and incentives are the operational concepts of extrinsic motivation. A lack of reward ¹ or incentives can become a major barrier to knowledge sharing. This statement is based on the assumption that knowledge is a valuable asset and sharing knowledge is costly (Davenport & Prusak, 1998). Meanwhile, some rewards and incentives will be perceived differently by each individual depending on the perception and the expectation of the level of reward.

The last organizational context is leadership. Leadership is about influencing, motivating, and enabling others to contribute to the organization of which they are members (McShane & Glinow 2013). Leadership plays a big role in influencing and motivating individuals to share their knowledge. The leadership style influences the individual's perception on knowledge sharing. Burns (1978) introduced ¹⁸ two styles of leadership: transformational leadership and transactional leadership. A transformational leader stimulates and influences individuals to achieve extraordinary outcomes. Transformational leadership can effect positive changes by taking care of

an individual's needs and interests. Meanwhile, transactional leadership stimulates and motivates individuals through the exchange. The exchange forms are reward and punishment. Transactional leadership only conducts the routine operation of the organization and is not concerned about future changes (McShane & Glinow, 2013). Burns (1978) states that the leadership's styles are carried out by every leader but each has different combinations. Both styles can be used to motivate and encourage individuals to engage in the knowledge sharing process, but it depends on the individual's needs and wants (Yang, 2007). Some individuals are concerned about rewards and punishments so the transactional leadership can apply to these kind of individuals. Others are more concerned about future development. For those individuals, the transformational leader is more effective than a transactional leader.

2.2.3. *Infrastructure and Opportunity Context*

The role of infrastructure and opportunity has been considered as an enabler of knowledge sharing behavior. Infrastructures such as place and technology facilitate interaction among individuals to share their knowledge (Davenport & Prusak, 1998; Cheng, Ho & Lau, 2010; Supar, 2006).

Nowadays, interaction can be physical or virtual. Nonaka & Toyama (2002) argues that individuals need the physical context while conducting knowledge sharing referred to as 'Ba', a term that was originally proposed by Japanese philosopher Kitaro Nishida. Ba is not only a place but also a time for sharing. Ba is believed to provide the energy, quality and location to perform individual interactions in the knowledge sharing process. The organization can formally provide a Ba space or informally use other places such as cafés or sports rooms (Davenport & Prusak, 1998).

Besides places, technology can be used to facilitate the knowledge transfer activity (Wasko & Faraj, 2005). The aims of using technology in knowledge management are not only to facilitate the process of knowledge sharing but also to capture, codify, store, manage, and transfer the knowledge. Technology can create the connection between individuals who are not in the same place or time period. Moreover, the aim of using technology in knowledge sharing process is to create an interaction anytime and anywhere (Davenport & Prusak, 1998; Cheng, Ho & Lau, 2010).

In the knowledge sharing process, a person needs an opportunity to share their knowledge with others. Siemsen, Roth & Balasubramanian (2008) defined 'opportunity' as time availability. Time availability is the degree to which a person has free time available at work. Opportunity can also be defined as the occasion available for a person to share his/her knowledge. Occasional availability gives individuals a chance to talk about his/her knowledge.

2.2.4. *Social Context*

Human beings are social creatures. According to Fiske (1992), an individual organizes his/her social life based on his/her relations with others. Building a relationship

influences knowledge sharing. Boer, Berends & van Baalen, (2011) argue that knowledge sharing is fundamentally relational in nature. It is affected by the nature of those relations. Social context can be drivers or barriers for knowledge sharing activity. Boer, Berends & van Baalen (2011) investigated the relationships that influence an individual's knowledge sharing behavior based on Relational Model Theory (RMT). They found the existence of four basic forms of relationship in the knowledge sharing process. Those are: communal sharing, authority ranking, equality matching, and market pricing.

A communal sharing relationship treats individuals of group or dyad equivalently or undifferentiated (Fiske, 1992). In knowledge sharing terminology this is known as 'community of practice'. People interact based on the same needs and interests. In a communal sharing relationship, knowledge is treated as a common resource rather than an individual asset. In this relationship, people do not share if they do not have the same interests.

Authority ranking relationships treat individuals asymmetrically since individuals in a group or dyad are ranked into different hierarchies. This relationship is usually associated with power. The power can be distinguished into two types (Lin, Wu & Lu, 2012), which are legitimate power and coercive power. In this relationship, individuals with a higher rank get more access to knowledge and share his/her knowledge with those of lower rank. People do not share if they are afraid of losing their power.

Equality matching relationship is built based on an exchange between individuals. This relationship is known as a social exchange relationship and balanced relationship. The core ideal of an equality matching relationship is keeping it balanced. Individuals will count how much he/she shares and gets from knowledge sharing. People do not share if there is no mutuality.

The last relationship in a social context is the market-pricing relationship. Market pricing relationships treat knowledge as valuable assets. Davenport & Prusak (1998) introduces this relationship as the knowledge market. In the knowledge market, knowledge is treated as a commodity and can be traded. The knowledge sharing process happens if there is sufficient benefit. People do not share if the reward is insufficient.

3. RESEARCH METHODOLOGY

This study was conducted using a qualitative approach. Qualitative study procedures are suited to advanced theoretical insight into phenomena that are embedded in the knowledge sharing process (Yin, 2003). The constructivist paradigm was adopted since this study focused on the informants' construction in their world setting. The findings in a constructivist paradigm are usually presented in terms of the criteria of grounded theory. Therefore this study used a grounded theory approach. Grounded theory is an approach for developing theory based on the data that are systematically gathered and analyzed (Strauss & Corbin, 1994).

Three universities were selected to explore the antecedents and barriers of lecturers' knowledge sharing behavior. Cases were expected to lead to similar results (Yin, 2003) as it allows the questions of what, why and how to be answered (Yin, 2003).

The main criteria for selecting the case/university were based on the study programs of Business Administration and Management in universities located in Jakarta, Bogor, and Bandung. The reasons to choose Business Administration and Management study programs were: 1. Those study programs are the most subscribed programs in Indonesia; 2. Business and society always expect the breakthrough of knowledge from those study programs to make their business more effective and efficient. Of the universities that were contacted, three universities agreed to participate in the research. Descriptions of the chosen universities are provided in Table 1.

Table 1
Description of Informants

University	Study Program	Location	Ownership	Founded	Number of Informants	Academic Rank
University A	Business Administration	Jakarta	Public	1964	5	Professor - Instructor
University B	Economic and Management	Bogor	Public	2001	5	Professor - Instructor
University C	Business	Bandung	Private	2008	4	Senior Lecturer - Instructor

The study was conducted in two stages. The first stage was a literature study and familiarization study. The second stage was data collection. The primary data was collected through interviews with lecturers in three universities using semi-structured interviews. The interviews were conducted in September 2014 – June 2015 using a qualitative research protocol. Each interview typically lasted between fifteen minutes and one hour. As shown in Table 1, the informants have different academic ranks. In Indonesia, there are four academic ranks: instructor, senior lecturer, associate professor, and professor.

The data were coded using an open coding process as suggested by the grounded theory protocols. The coding was conducted with no predetermined codes, and this allowed the preliminary codes to emerge from the data (Glaser, 1992). The coding process consisted of three processes: open coding, axial coding, and selective coding (Creswell, 2003). The data were validated using triangulation to other informants to build coherent justifications for the themes.

4. DISCUSSION OF THE FINDINGS

4.1. Antecedents of lecturers' knowledge sharing behavior

Table 2 presents the antecedents' categories and sub-categories of lecturers' knowledge sharing behavior. There are four major antecedents influencing lecturer's knowledge

sharing behavior: personal, organizational, infrastructure, and social contexts. The personal context was defined as the antecedents which come from the internal individual. The personal context consists of motivation, personal value, and competency. Organizational context was defined as antecedents which come from the

Table 2
Coding and Categorizing for Antecedents of Lecturers' Knowledge Sharing Behavior

<i>Category</i>	<i>Sub-Category</i>	<i>Antecedents</i>	<i>References</i>
Personal Context	Motivation	Recognition	3
		Self-satisfaction	9
		Personal expectation	6
		Self-esteem	6
		Sharing experience	9
		Getting the job done efficiently	3
	Personal value	Trust	14
		Helping others	8
		Respect for others	4
		Self-confidence	10
		Self-efficacy	10
		Organizational commitment	6
	Competency	Openness	4
		Need for knowledge	13
		Need for development	6
		Communication	14
Organization Context	Organization Culture	Set standardization	12
		Collective	8
		Collaborative	9
		Fairness	5
	Management Support	Support from senior	7
		Support from superior	9
	Reward/incentives	Reward	3
		Grant	5
	Leadership	Leadership commitment	14
		Leadership force	5
Infrastructure and Opportunity	Place	Formal	4
		Informal	14
	Time	Sufficient time	13
	Occasion	Formal meeting	1
		Informal meeting	7
	Technology	Supported technology	8
Social Context	1 Communal Sharing	Social media	6
		Same interest	14
	Authority ranking	Same team	14
		Superior	6
		Seniority	10
	Equality Matching	Regulation	5
		Reciprocity	10
	Market Pricing	Expected association	6
		Reward	9
		Grant	3

organization where the individual works. Organizational context consists of organization culture, management support, reward/incentives, and leadership. Infrastructure and opportunity context are defined as the antecedents that can facilitate the knowledge sharing process. Infrastructure and opportunity contexts include place, time, occasion and technology. Social context was defined as the relationship which occurs between individuals that influences knowledge-sharing behavior. The social context that was used in this study consists of communal sharing (known as 'community of practice'), authority ranking, equality matching (known as the 'social exchange'), and market pricing (known as 'knowledge market').

Table 2 shows that there are 17 antecedents of lecturers' knowledge sharing behavior in the personal context. The main antecedents of lecturers' knowledge sharing behavior are trust and communication. These antecedents are also the prerequisite conditions for lecturers to share their knowledge. All informants agree that trust and communication are the key elements in the knowledge sharing process.

Organizational context has nine antecedents that can influence lecturers' knowledge sharing process. Among those nine antecedents, there was a main antecedent that was mentioned by every informant which was leadership commitment. Leadership is needed to encourage and motivate lecturers to share their knowledge with others. Based on the interview, the role of a leader is important for the lecturers to gather and facilitate lecturers to share knowledge with others. As at University C, the leader commits to the knowledge sharing process. The knowledge sharing process happens because the study program in University C is new. Therefore, it needs to develop and catch up with the other universities. The leader thought that by sharing knowledge, an organization can achieve its goals faster.

The study found there are seven antecedents in infrastructure and opportunity context. The main antecedent in this context is sufficient time. Sufficient time allows lecturers to interact with each other. Sufficient time is needed in the knowledge sharing process because knowledge sharing will consume much more time than other activities, especially if there is a good topic or idea to be discussed.

The last category is social context. This category has nine antecedents. Findings show that having the same interest and the same team will make the knowledge sharing process happen. A person of seniority having an obligation to a subordinate also influences the knowledge sharing process. The mutual exchange between individuals also served as an antecedent of knowledge sharing behavior. The reward in market pricing is not always in monetary form; instead it can be given in another form such as a certificate. A certificate is important for a lecturer because the rise of lecturer's academic rank in Indonesia depends on specific awards. A certificate can be included in the calculation of a lecturer's cumulative accreditation points.

In summary, there are 42 antecedents of lecturer's knowledge sharing behavior that university management should consider. Those antecedents for every lecturer may vary but based on the research findings, the organization could focus on six main

antecedents that include: creating trust between individuals, setting intensive communication, leveraging leadership commitment, building communal sharing, forcing regeneration, and facilitating mutual exchange.

4.2. Barriers to lecturers' knowledge sharing behavior

Antecedents can become barriers for lecturers to share their knowledge. Table 3 shows the research findings on the barriers of lecturers' knowledge sharing behavior. As the antecedents, barriers of lectures knowledge sharing behavior are classified into four categories that include personal, organizational, infrastructure, and opportunity and social contexts.

Table 3
Coding and Categorizing for Barriers of Lecturers' Knowledge Sharing Behavior

Category	Sub-Category	Barriers	References
Personal Context	Motivation	Receiver response	8
		Past experience	11
	Personal value	Distrust	5
		Lack of self-confidence	2
	Competency	Lack of competency	3
		Don't know what to share	2
		Lack of communication skills	9
Organization Context	Organization Culture	Generation gap	1
		Individualistic	1
		Competitive	4
		Unfair	2
	Management Support	No support from seniors	4
		No support from superiors	4
	Reward/incentives	No reward	4
Infrastructure and Opportunity	Leadership	No benefit	8
		No commitment	14
	Place	No place to share	7
	Time	Limited time	14
	Opportunity	Uneven opportunity	3
	Technology	Lack of technology Efficacy	3
		Limited resources	6
Social Context	Communal Sharing	Not same interest	13
		Not same team	13
	Authority ranking	Afraid of losing power	2
		Respect to the elder	10
	Equality Matching	No reciprocity	4
	Market Pricing	Afraid of losing reward	2
		Reward insufficient	1

The research found that there are seven barriers in the personal context. Among those barriers, there are three main barriers that include: receiver response, past experience and lack of communication skills. Unresponsive receivers sometimes become a constraint in the knowledge sharing process. The senders noticed who the

responsive and unresponsive receivers were. Lecturers choose not to share their knowledge if the receiver is unresponsive. Past experience is the main barrier in the knowledge sharing process if the past experience is bad and left the sender feeling undermined or betrayed. Lack of communication skills becomes a serious barrier to lecturers' knowledge sharing because without communication, it is impossible to make knowledge sharing effective.

There are nine barriers regarding organizational context as can be seen in Table 3. A leader who does not have commitment to encourage and motivate others to share knowledge is considered as a barrier in the organization. If the leader has no commitment, then it is impossible to create a knowledge sharing culture in the organization. Uncommitted leaders will affect the whole knowledge sharing process in an organization.

Limited time is the main barrier in the infrastructure and opportunity context. All informants mentioned that they did not have sufficient time to share their knowledge with others. It happens because they have a full schedule of teaching, counseling and researching. Besides, the lecturers do not always meet each other at the same time. University A does not have official office hours for the lecturers, so the lecturers' attendance depends on their teaching or counseling schedules. University B has official office hours for lecturers, but these are not rigidly implemented. Therefore, the consequence is the same as those at University A where the lecturers' attendance depends on the teaching or counseling schedules. University C has official office hours. Even though the lecturers attend the office at the same time and the same place, their main focus is on accomplishing their job roles.

In the social context, interest and teams are the main barriers. It is not easy to share knowledge with people who have a different interest or belong to a different team. If they were forced to share, the response of the receiver would be meaningless or no response at all. The other barrier in the social context is respect for the elderly. Indonesian culture teaches youth to give respect to their elders. In knowledge sharing, this relationship is a barrier for lecturers to share their knowledge with older or senior employees/managers. The feeling of discomfort and being impolite occurs when younger lecturers have to share their knowledge with a senior lecturer. This happens because of the assumption that the senior lecturer knows better than the junior lecturer.

To sum up, there are 28 barriers of lecturers' knowledge sharing. An organization must have strategies to minimize the barriers and optimize the antecedents. As can be seen in Table 3, there are eight main barriers to lecturers' knowledge sharing. The organization can decide which barriers it wants to minimize or avoid.

5. CONCLUSION

This research's findings show there are 42 antecedents and 28 barriers that management must consider. To cope with the antecedents and barriers, the university management

must have an integrated strategy which is crucial to be implemented since in the education sector knowledge sharing among lecturers is a critical process for knowledge development.

Some strategies that can be developed by the universities include:

- Setting routine and regular meetings for knowledge sharing.
Routine meetings facilitate lecturers to interact and communicate with each other. By attending or presenting a routine meeting, lecturers show their interest in a specific topic and know others' interests as well. A routine meeting must be set up in different ways, because people will get bored if the routine meeting becomes too rigid.
- Leveraging lecturers' competency
Organizations facilitate lecturers to leverage their knowledge to have equal competency as those of others. Lecturers' competency influences not only the sharing process but also the organization's performance. Having competent lecturers will elevate the quality of the university. By leveraging lecturers' competency, the mutual exchange of knowledge among lecturers can happen.
- Showing leadership commitment to knowledge sharing
A leader needs to show his/her commitment to knowledge sharing activity. The commitment will create a knowledge sharing culture in the organization. The leader's commitment can be shown by appointing a knowledge management officer who is responsible to organize and manage the knowledge flow. It is impossible for a leader to manage the knowledge flow by himself/herself.
- Creating collaborative activities among lecturers
Collaborative activities such as teaching or researching can elevate the level of communication. By communicating regularly, the trust between individuals can be developed. Therefore, collaborative activities should also focus on knowledge sharing, not only on job sharing among lecturers.
- Giving special rewards for lecturers who share their knowledge with others
Even though the reward is not the main antecedent for lecturers, sometimes it influences lecturers' knowledge sharing behavior. The forms of reward depend on the lecturers' expectation. Some lecturers expect monetary reward, while others expect intangible reward such as a certificate or a trophy.

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